

IN THE CLAIMS

1. (Currently Amended) A method for communicating from a first virtual machine, defined by a virtual machine operating system; to an external device, said a virtual machine operating system base portion also defining said first virtual machine and other virtual machines from a CPU and other real resources of a real computer, and a base portion common to all of said virtual machines; said virtual machine operating system being coupled to said external device via a network; said method comprising the steps of:

said base portion providing said first virtual machine and said other virtual machines with a share of said CPU, said base portion being common to all of said virtual machines and providing a communication pathway for communications from said first virtual machine to said other virtual machines;

    said first virtual machine writing an IP datagram to an output buffer allocated to said first virtual machine, said IP datagram comprising data and a destination IP address associated with said external device; and

program functions in said base portion reading said IP datagram from said output buffer to determine said destination IP address, then copying said IP datagram from said output buffer into storage allocated to said common base portion such that whereby said IP datagram passes from said first virtual machine into said common storage of said base portion storage without passing through any other virtual machine; said base portion identifying said destination IP address from said IP datagram and determining from said destination IP address that said destination IP address does not correspond to any of said other virtual machines or otherwise reside in said computer and in response, said base portion forwarding said IP datagram to requesting a tangible network adapter card coupled to an external network; and

said tangible network adapter card sending for said network to send said IP datagram to the IP destination address via said external network.

Claim 2. (Canceled)

3. (Currently Amended) A method as set forth in claim 1 wherein the steps of defining said first virtual machine and other virtual machines from a CPU and other real resources of a real computer, and providing a communication pathway between said first virtual machine and said other virtual machines, are performed by a single instance of said base portion, said network is a LAN.

4. (Currently Amended) A method as set forth in claim 1 wherein said common base portion includes a list of destination IP addresses associated with each of said virtual machines, and said program functions in said common-base portion determines that said destination IP address in said IP datagram is not associated with any of said virtual machines by checking said list.

Claims 5-7. (Canceled)

8. (Currently Amended) A method as set forth in claim 1 further comprising the steps of:

    said first virtual machine writing a second IP datagram to a second output buffer allocated to said first virtual machine, said second IP datagram comprising second data and a second destination IP address of another a second one of said virtual machines; and

program functions in said base portion reading said second IP datagram from said output buffer to determine said destination IP address, then copying said second IP datagram from said second output buffer into storage allocated to said common base portion such that whereby said second IP datagram passes from said first virtual machine into said common base portion storage without passing through any other virtual machines, said base portion determining that said second destination IP address is an IP address of said second virtual machine, and then in response, said base portion copying said second IP datagram into an input buffer allocated to said second other virtual machine without said second IP datagram leaving said computer.

Claims 9-15 (Canceled)

Please enter new claims 16-30, as follows:

16. (New) A method as set forth in claim 1 further comprising the steps of:

an application program executing in said first virtual machine and forming a request to the external device, said request including request data and said destination IP address associated with said external device; and wherein

said IP datagram written by said first virtual machine to said output buffer allocated to said first virtual machine is based on said request.

17. (New) A method as set forth in claim 1 further comprising the steps of:

a second one of said virtual machines writing a second IP datagram to a second output buffer allocated to said second virtual machine, said second IP datagram comprising second data and a second destination IP address associated with a second external device;

said base portion reading said second IP datagram from said second output buffer, copying said second IP datagram from said second output buffer into storage allocated to said base portion such that said second IP datagram passes from said second virtual machine into said storage of said base portion without passing through any other virtual machine, said base portion identifying said second destination IP address from said second IP datagram and determining from said second destination IP address that said second destination IP address does not correspond to any of the other virtual machines or otherwise reside in said computer and in response, said base portion forwarding said second IP datagram to said tangible network adapter card; and

said tangible network adapter card sending said second IP datagram to said second IP destination address via said external network.

18. (New) A method as set forth in claim 17 wherein there is a single instance of programming within said base portion which performs the reading, copying, identifying, determining and forwarding steps for both said first IP datagram and said second IP datagram.

19. (New) A system for communicating from a first virtual machine to an external device, said system comprising:

a CPU; and

base portion means for defining said first virtual machine and other virtual machines from said CPU and other real resources of a real computer; and wherein

said base portion means is common to all of said virtual machines and provides a communication pathway for communications from said first virtual machine to said other virtual machines;

said first virtual machine including means for writing an IP datagram to an output buffer allocated to said first virtual machine, said IP datagram comprising data and a destination IP address associated with said external device; and

said base portion means includes means for copying said IP datagram from said output buffer into storage allocated to said base portion such that said IP datagram passes from said first virtual machine into said storage of said base portion storage without passing through any other virtual machine, identifying said destination IP address from said IP datagram and determining from said destination IP address that said destination IP address does not correspond to any of said other virtual machines or otherwise reside in said computer and in response, forwarding said IP datagram to a tangible network adapter card coupled to an external network; and

said tangible network adapter card sending said IP datagram to the IP destination address via said external network.

20. (New) A system as set forth in claim 19 wherein the means for defining said first virtual machine and other virtual machines from a CPU and other real resources of a real computer and providing a communication pathway between said first virtual machine and said other virtual machines, are performed by a single instance of programming within said base portion means.

21. (New) A system as set forth in claim 19 wherein said base portion means includes a list of destination IP addresses associated with each of said virtual machines, and said base portion means determines that said destination IP address in said IP datagram is not associated with any of said virtual machines by checking said list.

22. (New) A system as set forth in claim 19 wherein:

said first virtual machine includes means for writing a second IP datagram to said output buffer allocated to said first virtual machine, said second IP datagram comprising second data and a second destination IP address of another a second one of said virtual machines; and

said base portion means including means for copying said second IP datagram from said output buffer into said storage allocated to said base portion means such that said second IP datagram passes from said first virtual machine into said storage of said base portion without passing through any other virtual machines, said base portion means including means for determining that said second destination IP address is an IP address of said second virtual machine, and in response, copying said second IP datagram into an input buffer allocated to said second virtual machine without said second IP datagram leaving said computer.

23. (New) A system as set forth in claim 19 further comprising:

a second one of said virtual machines including means for writing a second IP datagram to a second output buffer allocated to said second virtual machine, said second IP datagram comprising second data and a second destination IP address associated with a second external device;

said base portion including means for reading said second IP datagram from said second output buffer, copying said second IP datagram from said second output buffer into storage allocated to said base portion such that said second IP datagram passes from said second virtual machine into said storage of said base portion without passing through any other virtual machine, said base portion including means for identifying said second destination IP address from said second IP datagram and determining from said second destination IP address that said second destination IP address does not correspond to any of the other virtual machines or otherwise reside in said computer and in response, forwarding said second IP datagram to said tangible network adapter card; and

    said tangible network adapter card sending said second IP datagram to said second IP destination address via said external network.

24. (New) A system as set forth in claim 23 wherein there is a single instance of programming within said base portion means which performs the reading, copying, identifying, determining and forwarding for both said first IP datagram and said second IP datagram.

25. (New) A computer program product for communicating from a first virtual machine to an external device, said computer program product comprising:

    a computer readable media;

    base portion program instructions to define said first virtual machine and other virtual machines from said CPU and other real resources of a real computer; and wherein

    said base portion program instructions define a base portion which is common to all of said virtual machines and provides a communication pathway for communications from said first virtual machine to said other virtual machines;

said first virtual machine writes an IP datagram to an output buffer allocated to said first virtual machine, said IP datagram comprising data and a destination IP address associated with said external device; and

    said base portion program instructions copy said IP datagram from said output buffer into storage allocated to said base portion such that said IP datagram passes from said first virtual machine into said storage of said base portion storage without passing through any other virtual machine, said base portion program instructions identify said destination IP address from said IP datagram and determine from said destination IP address that said destination IP address does not correspond to any of said other virtual machines or otherwise reside in said computer and in response, forward said IP datagram to a tangible network adapter card coupled to an external network; and wherein

    said base portion program instructions are stored on said media.

26. (New) A computer program product as set forth in claim 25 wherein the base portion program instructions which define said first virtual machine and other virtual machines from a CPU and other real resources of a real computer and provide a communication pathway between said first virtual machine and said other virtual machines consist of a single instance of program instructions.

27. (New) A computer program product as set forth in claim 25 wherein said base portion program instructions determine that said destination IP address in said IP datagram is not associated with any of said virtual machines by checking a list of IP address of virtual machines within said computer.

28. (New) A computer program product as set forth in claim 25 wherein:

said first virtual machine writes a second IP datagram to said output buffer allocated to said first virtual machine, said second IP datagram comprising second data and a second destination IP address of a second one of said virtual machines; and

said base portion program instructions copy said second IP datagram from said output buffer into said storage allocated to said base portion such that said second IP datagram passes from said first virtual machine into said storage of said base portion without passing through any other virtual machines, and determine that said second destination IP address is an IP address of said second virtual machine, and in response, copy said second IP datagram into an input buffer allocated to said second virtual machine without said second IP datagram leaving said computer.

29. (New) A computer program product as set forth in claim 25 wherein:

a second one of said virtual machines writing a second IP datagram to a second output buffer allocated to said second virtual machine, said second IP datagram comprising second data and a second destination IP address associated with a second external device; and

said base portion program instructions read said second IP datagram from said second output buffer, copy said second IP datagram from said second output buffer into storage allocated to said base portion such that said second IP datagram passes from said second virtual machine into said storage of said base portion without passing through any other virtual machine, said base portion program instructions identify said second destination IP address from said second IP datagram and determine from said second destination IP address that said second

destination IP address does not correspond to any of the other virtual machines or otherwise reside in said computer and in response, forward said second IP datagram to said tangible network adapter card.

30. (New) A computer program product as set forth in claim 29 wherein there is a single instance of programming within said base portion program instructions which performs the reading, copying, identifying, determining and forwarding for both said first IP datagram and said second IP datagram.